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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,190

08/30/2005

Mieko Sakai

2005-0030A

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EXAMINER

AUSTIN, AARON

ART UNIT

PAPER NUMBER

1775

MAIL DATE

DELIVERY MODE

06/15/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/521,190

Applicant(s)

SAKAI ET AL.

Examiner

Aaron S. Austin

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 4/14/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,5-8 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5-8 and 10-14 is/are rejected.
- 7) ☒ Claim(s) 1 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/14/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/30/05</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

Claims 1 and 8 are objected to because of the following informalities: the elements presented by the claims are not separated by line indentation for clarity. Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. 37 CFR 1.75(i), MPEP 608.01(m).

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 5-7, and 11-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship defining the claimed volume ratio. The volume ratio is a ratio between what values?

Claim 7 recites the limitation "the surface" in line 2. There is insufficient antecedent basis for this limitation in the claim. Claim 1, refers to a wall surface to which the artificial stone is mounted, a back surface, and an edge surface. It is unclear as to which surface has the claimed asperity.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5-6, 8, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai (US Patent No. 6,309,562) in view of JP 4-7458.

Sakai teaches an artificial stone wall material and its method of manufacture comprising a mixture of transparent inorganic aggregate and a resin as main components (column 2, lines 18-30). The transparent aggregate consists of small (fine) particles in the size of about 0.21-4 mm (column 4, line 12) and fine (finely divided) particles having a particle size of 44-99 microns (column 4, line 47). The resin comprises 7-18 wt. % of the product (column 2, line 21), with the ratio of small particle to finely divided particle being 0.5:1 to 5:1 (column 3, line 43). Density of the product is 2.2 g/cm<sup>3</sup> or higher (column 6, line 64).

Sakai does not teach a metal fitting molded into the back surface or edge surface of the wall material at the volume ratio claimed nor the shrinkage factor claimed.

JP 4-7458 teaches an architectural finishing material wherein a trigger metal material is embedded in the rear surface of the finishing material body (claim 1). Therefore, as JP 4-7458 clearly teaches inclusion of a metal fitting in an architectural finishing material provides the advantage of a means for attachment to an installing architecture (English translation: page 69, lines 3-7), it would have been obvious to one

of ordinary skill in the art at the time of the claimed invention to include a metal fitting for attachment to a wall surface in the artificial stone of Sakai in view of Yamanashi et al. Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the volume ratio with which to embed the support for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). The volume ratio is a result effective variable as the depth to which the support is embedded determines the strength of the bond between the support and the artificial stone. If the support is embedded in too shallow a position it may break free.

Regarding the shrinkage factor, as like materials are used in the amounts claimed in a like manner, the artificial stone is expected to have a shrinkage factor as claimed.

Regarding claim 5, the trigger metal material taught by JP 4-7458 is a metal fitting.

Regarding claim 6, the transparent aggregate comprises 82-93 wt. % of the product (column 2, line 21), with the ratio of small particle to fine particle being 0.5:1 to 5:1 (column 3, line 43). The small particle comprises 50 to 100 wt.% of a transparent inorganic small particle (column 4, lines 54-56), therefore 5 wt% or more of the product comprises a transparent inorganic fine particle. The inorganic fine component may be transparent (column 3, lines 6-15; column 4, lines 54-56).

Regarding claim 10, the resin may be any of a number of polymeric materials (column 6, lines 17-23). As these materials form the same function, it would be obvious to one of ordinary skill in the art to mix the resins to obtain multiple benefits in adhesion strength, temperature resistance, etc. imparted by the numerous options.

Claims 7, 10, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai (US Patent No. 6,309,562) in view of Yamanashi et al. (US 2003/0087074).

Sakai teaches an artificial stone wall material as described above.

Sakai further teaches a roughened surface formed by using a water jet or organic solvent (column 8, lines 30-32; column 8, line 64 to column 9, line 6; column 9, line 28). Sakai does not teach the roughening process as producing a concavo-convex surface having a height of 1 mm to 100 mm as claimed.

However, as Applicant teaches the concave and convex surface is formed by water jet and as Sakai teaches roughening using water jet, the product as taught by Sakai has a concavo-convex surface as like materials are used in a like manner.

"[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In this case, Sakai does not specify the workable ranges for the depth of the roughened surface, but they do describe the general conditions of the claim, namely water jet treatment of an artificial stone surface to form a product that resembles a natural stone. It would not be

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inventive to discover the workable ranges for the height between the concavity and convexity by routine experimentation of the invention taught by Sakai to produce a suitable imitation of natural rock.

In addition to the argument set forth above, Yamanashi et al. teach an artificial stone having luminescence performance wherein water machining produces a concave groove depth of 0.02 to 1.0 mm that varies by composition (paragraphs [155] and [181]). One of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the compositional proportions taught by Yamanashi et al. overlap the instantly claimed proportions and therefore are considered to establish a prima facie case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages”, In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Regarding claim 10, in addition to the argument set forth above, Yamanashi et al. teach mixture of resins and monomers is known in the art. It would therefore be obvious to one of ordinary skill in the art to mix the resins taught by Sakai.

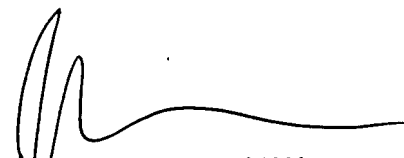
**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron S. Austin whose telephone number is (571) 272-8935. The examiner can normally be reached on Monday-Friday: 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ASA



**JOHN J. ZIMMERMAN**  
**PRIMARY EXAMINER**